

- a  $\text{CH}_3\text{OCH}_3$  - Methoxymethane
- b  $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$  - Ethoxyethane
- c  $(\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2)_2\text{O}$  - Butoxymethane
- d  $\text{CH}_3\text{CH}_2\text{OCH}_3$  - methoxyethane
- e  $\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3$  - ethoxypropane

2) Ethers are inert at moderate temperature

ii Simple ethers are less dense than water, although the density increase with increasing relative molecular mass and some of aromatic ethers in fact denser than water

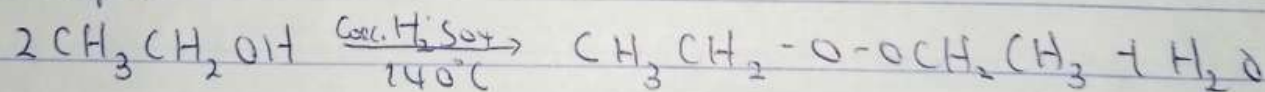
3 Partial dehydration of alcohols

- Simple ethers are manufactured from alcohols by catalytic dehydration.

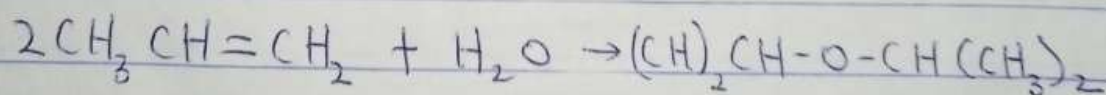
- The alcohol in excess and concentrated tetraoxosulphate(VI) acid is heated at carefully maintained temperature of  $140^\circ\text{C}$

- If excess alcohol is not used, the temperature is as high as  $170 - 180^\circ\text{C}$ , further dehydration to yield alkene occurs

Example



b. Controlled catalytic hydration of olefins



4) Ethylene oxide is used as an intermediate in the hydrolytic manufacture of ethylene glycol

ii Ethylene oxide is used as a gaseous sterilizing agent.

iii Ethylene oxide is used as a in the preparation of nonionic emulsifying agents, plastics, plasticizers.